

REMARKS/ARGUMENTS

I. STATUS OF CLAIMS

Claims 1-15 remain in this application. Claims 1 and 11 have been amended. It should be noted that Applicant has elected to amend said Claims solely for the purpose of expediting the patent application process in a manner consistent with the PTO's Patent Business Goals, 65 Fed. Reg. 54603 (9/8/00). In making this amendment, Applicant has not and does not in any way narrow the scope of protection to which Applicant considers the invention herein to be entitled and does not concede, in any way, that the subject matter of such Claims was in fact taught or disclosed by the cited prior art. Rather, Applicant reserves Applicant's right to pursue such protection at a later point in time and merely seeks to pursue protection for the subject matter presented in this submission.

II. CLAIM REJECTIONS – 35 U.S.C. § 103

The Office Action rejected Claims 1, 2, 4, 6, 7, 9, 11, 12, and 14 under 35 U.S.C. § 103(a) as being unpatentable over Shah (6,292,832) in view of Rabinovich (6,256,675).

Applicant respectfully disagrees.

Claims 1, 6, and 11 appear as follows:

1. A process for determining latency between multiple servers and a client across a network in a computer environment, comprising the steps of:
receiving a request for latency metrics on a server;
wherein said latency metric request specifies a particular client;

wherein a latency management table comprises a list of IP addresses along with corresponding Border Gateway Protocol (BGP) hop counts, dynamic hop counts, and Round Trip Times (RTT);

looking up the latency metric for said client in said latency management table;

sending said latency metric to the requesting server;

wherein only the BGP hop count for said client in said latency management table is used for said latency metric upon an initial request for said client; and

wherein the dynamic hop count and RTT data for said client in said latency management table are used for said latency metric for subsequent requests for said client.

6. An apparatus for determining latency between multiple servers and a client across a network in a computer environment, comprising:

a module for receiving a request for latency metrics on a server;

wherein said latency metric request specifies a particular client;

a latency management table;

wherein said latency management table comprises a list of IP addresses along with corresponding Border Gateway Protocol (BGP) hop counts, dynamic hop counts, and Round Trip Times (RTT);

a module for looking up the latency metric for said client in said latency management table;

a module for sending said latency metric to the requesting server;

wherein only the BGP hop count for said client in said latency management table is used for said latency metric upon an initial request for said client; and

wherein the dynamic hop count and RTT data for said client in said latency management table are used for said latency metric for subsequent requests for said client.

11. A program storage medium readable by a computer, tangibly embodying a program of instructions executable by the computer to perform method steps for determining latency between multiple servers and a client across a network in a computer environment, comprising the steps of:

receiving a request for latency metrics on a server;

wherein said latency metric request specifies a particular client;

wherein a latency management table comprises a list of IP addresses along with corresponding Border Gateway Protocol (BGP) hop counts, dynamic hop counts, and Round Trip Times (RTT);

looking up the latency metric for said client in said latency management table;

sending said latency metric to the requesting server;

wherein only the BGP hop count for said client in said latency management table is used for said latency metric upon an initial request for said client; and

wherein the dynamic hop count and RTT data for said client in said latency management table are used for said latency metric for subsequent requests for said client.

In particular, The Office Action states:

“Rabinovich teaches only the BGP hop count for said client in said latency management table is used for said latency metric upon an initial request for said client (e.g., col. 20, lines 10-20).”

However, this is an incorrect interpretation of Rabinovich. Rabinovich teaches away from what the Office Action states by teaching that BGP hop count is used for distance calculations for **all** requests. Rabinovich teaches that a mapping function is used that calculates a distance using the number of BGP hops from a host's AS to another AS, A, in combination with the OSPF cost of delivering a message from the host to the nearest border router that advertises the external route to A within the host's AS.

Col. 19, lines 6-11 state:

“The answer to these questions would differ slightly depending on the protocols considered. To be specific, assume that BGP is used to route IP messages between autonomous systems (AS) of the Internet, and OSPF is used to route IP messages within an autonomous system, the most common (and recommended) open routing protocols.”

In col. 19, line 58-col. 20, line 9, Rabinovich states that the BGP hops are used in conjunction with the OSPF cost to calculate distance (emphasis added):

“The request distribution service extracts the following information from the routing databases of internal autonomous systems, using, for example, the functionality provided by Distributed Director from CISCO.

The BGP routing database in every internal autonomous system IAS is queried to obtain functions $\text{Border Routers}(A, \text{IAS})$ and $\text{BGP_hops}(A, \text{IAS})$. The OSPF link state database of the backbone area in each IAS is queried to obtain function $\text{OSPF_metric}(br, s)$, for every border router br and every host s .

Using this information, the request indirection service computes the mapping $(A, \text{times.host}) \rightarrow \text{distance}$ for each autonomous system A and internal host $host$, where distance is represented as a pair in which **the first component is the number of BGP hops from host's autonomous system to A , and the second component is the OSPF cost of delivering a message from host to the nearest border router that advertised the external route to A within host's autonomous system.**

Rabinovich further describes the two component formula in col. 20, lines 9-20 and specifies that the BGP hops and OSPF cost values are integral parts of the distance formula:

“Formally:

$$\text{distance} = (\text{BGP_hops}(A, \text{IAS}(\text{host})), \min [\text{OSPF_metric}(r, \text{host}) | r \in \text{Border Routers}(A, \text{IAS}(\text{host}))]),$$

where $\text{IAS}(\text{host})$ denotes the (internal) AS to which host belongs. **In agreement with Internet routing, which first uses BGP to route a message to the destination's autonomous system and then OSPF to deliver it within the autonomous system**, assume that distance (d_1, d_2) is greater than distance (d'_1, d'_2) if either $d'_1 > d_1$ or $d_1 = d'_1$ and $d_2 > d'_2$. The indirection service uses this mapping to find the closest host to a given client request, thereby implementing a function $\text{bestNode}(X, c)$ in the request distribution method.”

It is clear from Rabinovich that his invention's request indirection service uses both the BGP hops and the OSPF cost functions to calculate the distance mapping for hosts.

Rabinovich makes no mention of wherein only the BGP hop count for said client in said latency management table is used for said latency metric upon an initial request for said client as claimed in Claims 1, 6, and 11.

To combine Shah and Rabinovich as the Office Action suggests would result in a distance calculation used for every host distance calculation. The calculation would use the BGP hops and the OSPF cost factors for every host calculation. This is not what is claimed in Claims 1, 6, and 11.

Further, the Office Action states that:

"It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Rabinovich with Shah because if the system is initiating a request with only the BGP hop count stored in a table then it would have been obvious to only use the BGP hop count to determine latency because there is no other parameters to utilize in the initial request."

However, the Office Action's rationale for what would have been obvious to one of ordinary skill in the art at the time the invention was made is unfounded because, as discussed above, Rabinovich teaches that BGP hops are used in conjunction with OSPF costs in **all** host mapping distance calculations. Rabinovich relies on the BGP hops for **all** host mapping distance calculations and therefore would not have suggested that the BGP hop count would be useful only for the system initiating a request, as the Office Action suggests. There is no teaching or suggestion in Shah or Rabinovich to combine the references as suggested by the Office Action.

Therefore, Shah in view of Rabinovich does not teach or disclose the invention as claimed.

Claims 1, 6, and 11 are in allowable condition. Claims 2, 4, and 7, 9, and 12, 14 are dependent upon independent Claims 1, 6, and 11, respectively. Therefore, Applicant respectfully requests that the Examiner withdraw the rejection under 35 U.S.C. §103(a).

III. CLAIM REJECTIONS – 35 U.S.C. § 103

The Office Action rejected Claims 3, 8, and 13 under 35 U.S.C. § 103(a) as being unpatentable over Shah (6,292,832) and Rabinovich (6,256,675) and in view of what is well known in the art.

The rejection under 35 USC §103(a) is deemed moot in view of Applicant's comments regarding Claims 1, 6, and 11, above. Claims 3 and 8 and 13 are dependent upon independent Claims 1, 6, and 11, respectively. Therefore, Applicant respectfully requests that the Examiner withdraw the rejection under 35 USC §103(a).

IV. CLAIM REJECTIONS – 35 U.S.C. § 103

The Office Action rejected Claims 5, 10, and 15 under 35 U.S.C. § 103(a) as being unpatentable over Shah (6,292,832) and Rabinovich (6,256,675) and in view of McCanne (6,415,323).

The rejection under 35 USC §103(a) is deemed moot in view of Applicant's comments regarding Claims 1, 6, and 11, above. Claims 5 and 10 and 15 are dependent upon independent Claims 1, 6, and 11, respectively. Therefore, Applicant respectfully requests that the Examiner withdraw the rejection under 35 USC §103(a).

V. MISCELLANEOUS

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

The Applicants believe that all issues raised in the Office Action have been addressed and that allowance of the pending claims is appropriate. Entry of the amendments herein and further examination on the merits are respectfully requested.


The Examiner is invited to telephone the undersigned at (408) 414-1214 to discuss any issue that may advance prosecution.

No fee is believed to be due specifically in connection with this Reply. To the extent necessary, Applicants petition for an extension of time under 37 C.F.R. § 1.136. The Commissioner is authorized to charge any fee that may be due in connection with this Reply to our Deposit Account No. 50-1302.

Respectfully submitted,

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Dated: August 17, 2005


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